

**Summary of Available Data for LOUs 30 and 56  
AP Plant Area and Old Building D-1 Washdown  
Tronox Facility – Henderson, Nevada**

<b>Name of Facility:</b>	<b>LOU 30 – AP Plant Area Pad 35</b> <b>LOU 56 – AP Plant Area Old D-1 Building Wash-Down</b>
<b>Goal of Closure:</b>	<ul style="list-style-type: none"> <li>• Closure for future commercial/industrial use.</li> </ul>
<b>Site Investigation Area:</b>	<p><b>LOU 30 – AP Plant Area Pad 35</b></p> <ul style="list-style-type: none"> <li>• Size: “L-shaped” concrete pad, approximately 30 feet by 12 feet (long side) and 6 feet by 10 feet (base of “L”) [Ref. 3].</li> <li>• Location: North-central portion of the Site, approximately 20 feet south of the Old D-1 building.</li> <li>• Current Status/Features: LOU 30 is no longer active and the pad has been removed.</li> </ul> <p><b>LOU 56 – AP Plant Area Old D-1 Building Wash-Down</b></p> <ul style="list-style-type: none"> <li>• Size: Approximately 75 feet by 50 feet (0.1 acre).</li> <li>• Location: North-central portion of the Site, south of the perchlorate treatment unit.</li> <li>• Current Status/Features: LOU 56 is no longer active and the structure has been removed.</li> </ul>
<b>Description:</b>	<p><b>LOU 30 – AP Plant Area Pad 35</b></p> <ul style="list-style-type: none"> <li>• Pad 35 was an unbermed concrete pad, surrounded by soil, which began operations in 1989 and ceased circa 2001 [Ref. 3].</li> <li>• Pad 35 was formerly used to store drummed common trash from the AP, chlorate, and perchlorate process areas. The trash was potentially contaminated with AP and other industrial wastes [Ref. 3].</li> <li>• Other wastes stored at Pad 35 included iron oxide and desiccant bags [Ref. 3].</li> <li>• The pad exhibited cracks, deterioration, and crystalline material in 1991 at the time of a Site reconnaissance [Ref. 3].</li> <li>• During the 1991 site reconnaissance, drums labeled Cooling Tower Sludge, Calcined Packing Material, and Iron Oxide Sludge were observed being stored on open soil to the south of the pad [Ref. 3].</li> <li>• Run-off from this area flowed towards the north [Ref. 3].</li> </ul> <p><b>LOU 56 – AP Plant Area Old D-1 Building Wash-Down</b></p> <ul style="list-style-type: none"> <li>• LOU 56 was formerly used for dry material handling, mixing, and blending of AP [Ref. 3].</li> </ul>

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- The Old D-1 Building was built in the early 1950's as part of original AP Plant construction and operated through January 1989 when the New D-1 Building became operational [Ref. 3].
- AP dust cleanup was achieved by sweeping and infrequent washing of the floor [Ref. 3].

<b>Process Waste Streams Associated with LOU 30</b>	<b>Known or Potential Constituents Associated with LOU 30</b>
<p>Drummed waste of common trash from AP, chlorate, and perchlorate process areas.</p> <p>Trash in drums was potentially contaminated with perchlorate, iron oxide sludge from the groundwater remediation unit, cooling tower sludge, and calcined packing insulation [Ref. 3].</p>	<ul style="list-style-type: none"> <li>• Metals</li> <li>• Hexavalent chromium</li> <li>• Perchlorate</li> <li>• Chlorate</li> <li>• Ammonia</li> <li>• Wet chemistry analytes</li> </ul>
<b>Process Waste Streams Associated with LOU 56</b>	<b>Known or Potential Constituents Associated with LOU 56</b>
<p>Wash water from cleaning AP dust from the floor [Ref. 3].</p>	<ul style="list-style-type: none"> <li>• Ammonium perchlorate</li> <li>• Wet chemistry analytes</li> </ul>

**Overlapping or Adjacent LOUs:** The following LOUs overlap or are adjacent to each other as shown on Figure 1:

Overlapping LOUs

- No other LOUs overlap LOUs 30 or 56.

Adjacent LOUs

- LOUs 30 and 56 are located within 10 feet of each other, with LOU 56 being north (downgradient) of LOU 30.
- LOU 31 (Drum Recycling Area) is located approximately 100 feet to the east (cross-gradient) of LOU 56.
- LOU 58 (AP Plant Area New D-1 Building Washdown - Area I) is located approximately 40 feet north (downgradient) of LOU 56.
- LOU 19 (Pond AP-5) is located approximately 170 feet southeast (cross-gradient) of LOUs 30 and 56.

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LOU 58 is downgradient of LOU 56, therefore there is minimal potential for spills or runoff from LOU 58 to impact LOU 56. LOUs 31 and 19 are cross-gradient of LOUs 30 and 56; therefore, there is minimal potential for releases at LOUs 31 and 19 to impact LOUs 30 and 56.

Known or potential chemical classes associated with adjacent LOUs 19, 31, and 58 are consistent with those listed for LOUs 30 and 56; therefore, the addition of other chemical classes to the Phase B Analytical Plan for LOUs 30 and 56 is not required.

For detailed information on the LOUs listed above, please refer to the specific LOU data package.

**LOUs Potentially Affecting Soils in Other LOUs:**

- Releases from LOU 30 have the potential for impacting soils at LOU 56. However, as there have been no documented releases from LOU 30 and the operation utilizes minimal amounts of liquid, the potential for impacts are minor. Known or potential chemical classes associated with LOU 30 are consistent with those listed for LOU 56; therefore, the addition of other chemical classes to the Phase B Analytical Plan for LOU 56 is not required.

**Known or Potential Chemical Classes:**

- Metals
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes

**Known or Potential Release Mechanisms:**

Potential infiltration to subsurface soils and groundwater as a result of the following:

**LOU 30 – AP Plant Area Pad 35**

- Potential for drum leaks and subsequent runoff from the concrete pad to the surrounding soil [Ref. 3].
- Potential for drum leaks seeping through cracks in the concrete pad [Ref. 3].

**LOU 56 – AP Plant Area Old D-1 Building Wash-Down**

- Possible impacts to surrounding soils from surface releases or from AP in wash water [Ref. 3].
- AP in wash water from infrequent washing of floor; wash water drained to surrounding asphalt pad [Ref. 3].

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**Results of Historical Sampling:**

- No known historical soil sampling was identified in the documents reviewed for LOUs 30 and 56.
- Cross-gradient monitoring wells I-AR, I-B, and M-64 have been sampled from 1996 to 2004, for perchlorate, total chromium, TDS, nitrate, and chlorate. Analytical results are summarized on LOUs 30 and 56 Table 6 (see attached) [Ref. 2].

**Did Historical Samples Address Potential Release?**

- No

**Summary of Phase A SAI:**

Soil

- Soil boring SA19 is approximately 20 feet north (downgradient) of LOU 56 and was specifically sampled to evaluate LOU 56.
- Soil boring SA20 is approximately 400 feet east-northeast of LOU 30 (located within the boundaries of LOU 55) and was specifically sampled to evaluate LOU 30. However, this boring is not located in the vicinity of LOU 30 and is not considered representative of the conditions at LOU 30.

Groundwater

- Monitoring well I-AR is approximately 100 feet to the southeast (cross-gradient) and was specifically designed to evaluate LOU 56.
- Monitoring well M-55 is located approximately 450 east-northeast in Area I and was sampled to specifically evaluate LOU 30. However, this well is not located in the vicinity of LOU 30 and is not considered representative of the conditions at LOU 30.

Chemical classes detected in Phase A soil boring SA19:

- Metals
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- Dioxins/furans
- Radionuclides
- Asbestos

As a result of the Phase A data, the Phase B analytical plan for samples collected from LOUs 30 and 56 will be expanded to include analyses for dioxins/furans, VOCs, radionuclides, and asbestos.

Analytical results for soil and groundwater from the Phase A sampling event are summarized in LOUs 30 and 56 Tables 1 through 5 and Tables 7 through 21. [Ref. 1] (see attached).

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**Are Phase A Sample Locations in “Worst Case” Areas?**

- No

**Is Phase B Investigation Recommended?**

- Yes

**Proposed Phase B Soil Investigation/Rationale:**

The Phase B investigation for LOUs 30 and 56 consists of collecting soil samples from the following three locations:

- One (1) soil boring will be drilled south (upgradient) of LOU 30.
- Two (2) soil borings will be drilled at the west and east (cross-gradient) boundaries of LOU 56.
- All three borings along with the analytical program to evaluate soil samples from LOUs 30 and 56 are listed on **Table A – Soil Sampling and Analytical Plan for LOUs 30 and 56.**
- All of the soil borings for the Phase B investigation area judgmental sample locations. The closest random grid sample location is approximately 250 feet north of LOU 56.
- Judgmental sample locations:
  - Designed to evaluate soil for known or potential chemical classes associated with LOUs, based on the known process waste streams.
  - The three (3) judgmental locations include soil borings include SA173, SA179, and SA123.

**Proposed Phase B Constituents List for Soils:**

Judgmental sample locations will be analyzed for LOU-specific constituents consisting of the following:

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes

Judgmental sample locations will also be analyzed for the following constituents for area-wide coverage purposes:

- VOCs
- Organochlorine pesticides
- Radionuclides
- Dioxins/furans
- Asbestos

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**Proposed Phase B Groundwater Investigation/Rationale:** The Phase B groundwater investigation of LOUs 30 and 56 consists of collecting groundwater samples from three (3) locations to evaluate local groundwater conditions and as part of Site-wide evaluation of constituent trends in groundwater.

- Wells I-B and M-64 located north (downgradient) of LOUs 30 and 56 will be used to evaluate local and area-wide groundwater conditions.
- Well I-AR located southeast (upgradient) of LOUs 30 and 56 will be used to evaluate local and area-wide groundwater conditions.
- The sampling wells and the analytical program to evaluate groundwater samples associated with LOUs 30 and 56 are listed on **Table B – Groundwater Sampling and Analytical Plan for LOUs 30 and 56.**

**Proposed Phase B Constituents List for Groundwater:** Groundwater samples will be analyzed for the following analytes:

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- Organochlorine pesticides
- Radionuclides

**Proposed Phase B Soil Gas Investigation/Rationale:**

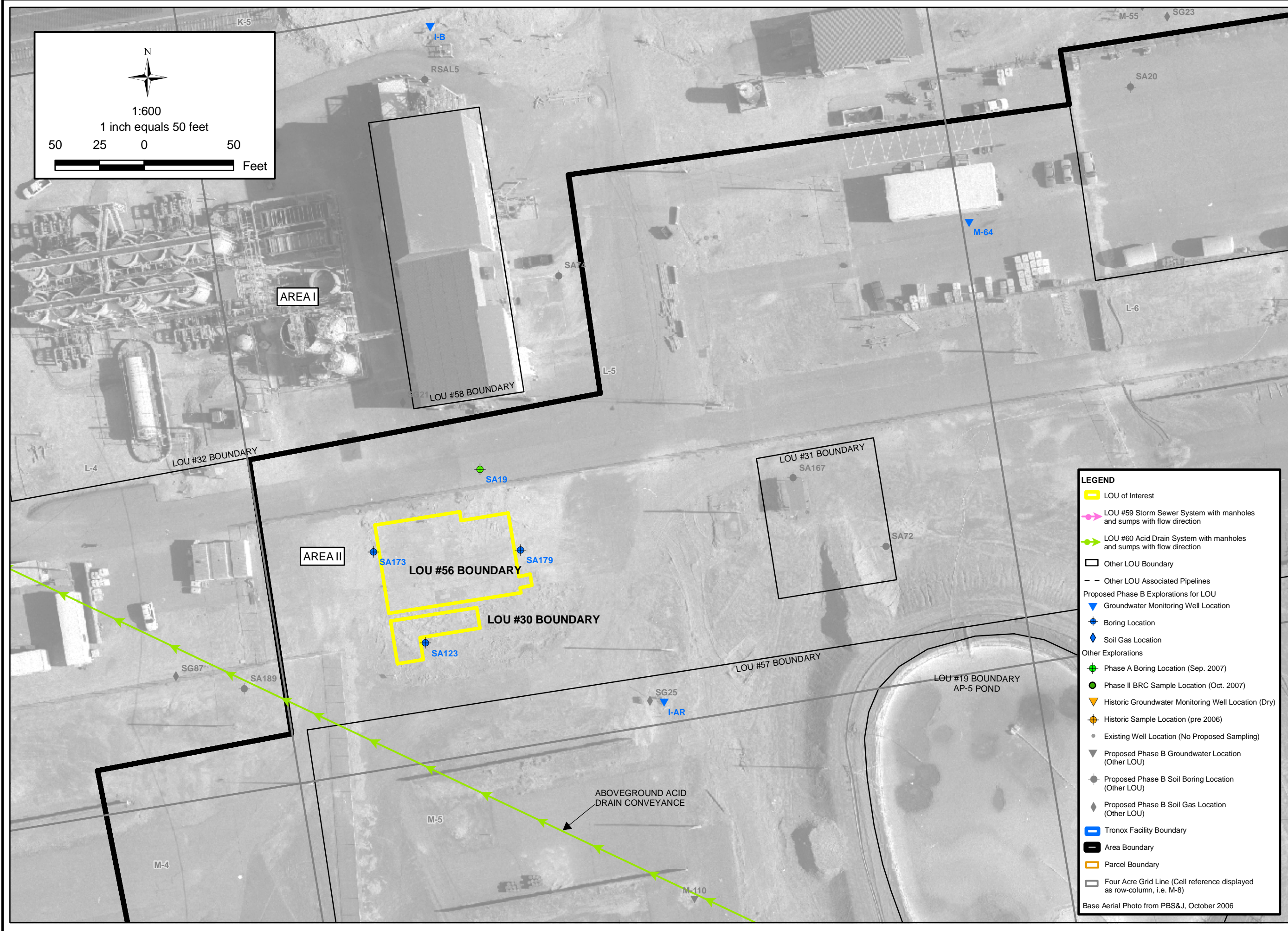
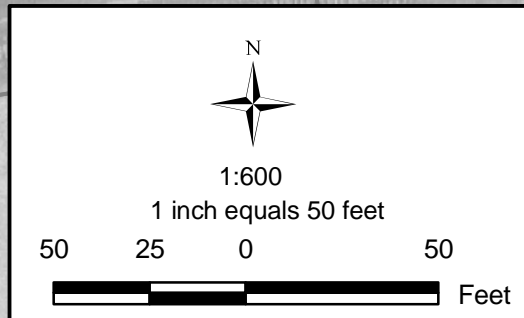
- None proposed specifically for this LOU.

**References:**

1. ENSR, 2007a, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. ENSR, 2007b, Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July-September 2007, November 2007.
3. Kleinfelder, 1993, Environmental Conditions Assessment, Kerr-McGee Chemical Corporation, Henderson, Nevada Facility, April 15, 1993 (Final).

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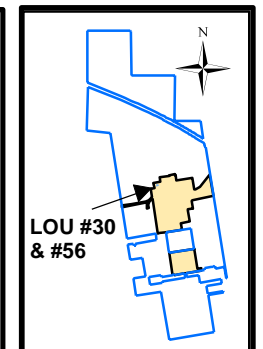
**LOU Figure**



**LEGEND**

- LOU of Interest
- ↔ LOU #59 Storm Sewer System with manholes and sumps with flow direction
- ↔ LOU #60 Acid Drain System with manholes and sumps with flow direction
- Other LOU Boundary
- Other LOU Associated Pipelines
- Proposed Phase B Explorations for LOU
  - ▼ Groundwater Monitoring Well Location
  - ⊕ Boring Location
  - ◆ Soil Gas Location
- Other Explorations
  - ⊕ Phase A Boring Location (Sep. 2007)
  - Phase II BRC Sample Location (Oct. 2007)
  - ▼ Historic Groundwater Monitoring Well Location (Dry)
  - ⊕ Historic Sample Location (pre 2006)
  - Existing Well Location (No Proposed Sampling)
  - ▼ Proposed Phase B Groundwater Location (Other LOU)
  - ◆ Proposed Phase B Soil Boring Location (Other LOU)
  - ◆ Proposed Phase B Soil Gas Location (Other LOU)
- Tronox Facility Boundary
- Area Boundary
- Parcel Boundary
- Four Acre Grid Line (Cell reference displayed as row-column, i.e. M-8)

Base Aerial Photo from PBS&J, October 2006



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<b>SAMPLE LOCATIONS FOR LOU #30 &amp; #56</b>	
<b>AP AREA - PAD 35 AND OLD BUILDING</b>	
<b>D-1 WASHDOWN</b>	
Phase B Area II Source Area Investigation	
Tronox Facility	
Henderson, Nevada	
SCALE:	DATE:
AS SHOWN	6/16/2008
PROJECT NUMBER:	04020-023-430

FIGURE NUMBER:	<b>1</b>
SHEET NUMBER:	<b>X</b>



**Summary of Available Data for LOUs 30 and 56  
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**Soil and Groundwater Characterization Data**

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**Sampling and Analytical Plans for LOU 30 and 56:**

Table A Soil Sampling and Analytical Plan for LOU 30 and 56  
Table B for Groundwater Sampling and Analytical Plan LOU 30 and 56

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths <sup>1</sup> (ft. bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	TPH-GRO (EPA 8015B)	VOCs <sup>2</sup> (EPA 8260B)	Wet Chemistry <sup>3</sup>	Total Cyanide (EPA 9012A)	OCPs <sup>4</sup> (EPA 8081A)	SVOCs <sup>5</sup> (EPA 8270C)	Radio-nuclides <sup>6</sup>	Dioxins/Furans <sup>7</sup>	Asbestos <sup>8</sup> EPA/540/R-97/028	Geo-technical Tests <sup>10</sup>	Rationale
<b>Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area 2 (M-2) and ending with the southeastern most grid in Area 2 (S-7)</b>																			
L-5	30, 56, 57	SA123	SA123-0.0	0.0		X	X			X	X		X			X			Boring located to evaluate LOU 30 (AP Area Pad 35), LOU 56 (AP Plant Area Old D-1 Building Wash-Down), and LOU 57 (AP Plant Transfer Lines to Sodium Chlorate Process, AP Plant SI's and Transfer Lines). Located at logical runoff point for releases from LOU 30 pad as an upslope stepout
L-5	30, 56, 57		SA123-0.5	0.5	X	X	X			X	X		Hold		X	X			for LOU 56 and downslope stepout for LOU 57.
L-5	30, 56, 57		SA123-10	10	X	X	X			X	X		Hold		X				
L-5	30, 56, 57		SA123-20	20	X	X	X			X	X		Hold		X				
L-5	30, 56, 57		SA123-30	30	X	X	X			X	X		Hold		X				
L-5	30, 56, 57		SA123-40	40	X	X	X			X	X		X		X				
L-5	56	SA173	SA173-0.0	0.0													X		Boring located to evaluate LOU 56 (AP Plant Area Old D-1 Building Wash-Down). Located adjacent to LOU 56 boundary to
L-5	56		SA173-0.5	0.5	X	X	X			X	X		X		X	X			evaluate potential runoff releases to the west. Phase A boring SA19 is located downslope of the drum storage area.
L-5	56		SA173-10	10	X	X	X			X	X		X		X				
L-5	56	SA179	SA179-0.0	0.0													X		Boring located to evaluate LOU 56 (AP Plant Area Old D-1 Building Wash-Down). Located adjacent to the LOU 56 boundary to
L-5	56		SA179-0.5	0.5	X	X	X			X	X		X		X	X			evaluate potential runoff releases to the east. Phase A boring SA19 is located downslope of the drum storage area.
L-5	56		SA179-10	10	X	X	X			X	X		X		X				
<b>Number of Samples:</b>						<b>9</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>3</b>	<b>0</b>

**Notes:**

- n/a Not applicable - boring is not associated with a specific LOU but is located to evaluate soil for general area-wide coverage.
- X Sample will be collected and analyzed.
- No sample collected under Phase B sampling program.
- DD\* Sample depth to be determined in the field where DD = sample depth (ft).
- TPH-DRO/ORO Total petroleum hydrocarbons - Diesel-Range Organics/Oil-Range Organics.

1. The 0.5 ft bgs sample will be collected from the 0.0 to 0.5 ft bgs interval, unless the area is paved. If area is paved, samples will be collected at 0.5 feet below or from a representative depth beneath the pavement. Alternately, if an unpaved area is within a reasonable distance, the sample will be moved to the unpaved area.
2. Samples for VOC analysis will be preserved in the field using sodium bisulfate (or DI water) and methanol preservatives per EPA Method 5035.
3. Consists of wet chemistry parameters (including pH) listed on Table 1 of the Phase B Source Area Work Plan.
4. Organochlorine Pesticides (includes analysis for hexachlorobenzene).
5. Semi-volatile Organic Compounds
6. Radionuclides consists of alpha spec reporting for isotopic thorium and isotopic uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
7. Dioxins/furans will be analyzed by EPA Method 8290 for all samples. Screening reports will be provided for 90% of the samples and full data packages for 10% of the samples.
8. Polychlorinated biphenyl
9. Soil samples for asbestos analyses will be collected from a depth of 0 to 2-inches bgs.
10. Geotechnical Tests consist of: moisture content (ASTM D-2216), grain size analysis (ASTM D-422 and C117-04), Soil Dry Bulk Density (ASTM D-2937), Grain Density (ASTM D-854, Soil-Water Filled Porosity (ASTM D-2216); Vertical Hydraulic Conductivity (ASTM D-5084/USEPA 9100).
11. SPLP samples will be analyzed by EPA method 1312 using two preparation methods: 1) with extraction fluid #2 (reagent water at pH 5.0±0.05), and 2) with extraction method #3 (reagent water); per NDEP.

Grid Location	Location Area	Monitoring Well No.	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval <sup>1</sup>	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Hex Cr (EPA 7199)	Metals	VOCs <sup>2</sup> (EPA 8260)	Wet Chemistry (a)	OCPs <sup>3</sup> (EPA 8081A)	SVOCs <sup>4</sup> (EPA 8270C)	Radionuclides <sup>5</sup>	Rationale
<b>Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area II (L-4) and ending with the southeastern-most grid covering Area II (S-7).</b>														
L5	IIN	I-B	17.8 - 42.5	Qal/MCf <sub>g1</sub>	no	X	X	X	X	X	X	X	X	Located to serve as a downgradient stepout to LOUs 30 and 56 and for general Site coverage.
L5	II	I-AR	25 - 45	Qal/MCf <sub>g1</sub>	yes	X	X	X	X	X	X	X	X	Located as an upgradient stepout for LOUs 30, 31, and 56; and LOU 58 and for general Site coverage.
L6	II	M-64	12.7 - 37.3	Qal/MCf <sub>g1</sub>	no	X	X	X	X	X	X	X	X	Located to evaluate LOU 55; as a downgradient stepout for LOUs 30 and 56 and for general Site coverage.
<b>Number of Field Samples:</b>						<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	
<b>Notes:</b>														
* Well completion information or boring log not available. Soil type inferred from nearby wells and geologic cross-section provided in the Phase A Source Area Investigation Report (ENSR 2007). ENSR is in the process of obtaining information from BMI.														
X Sample will be collected and analyzed.														
1 It is anticipated that the large majority of the flow to the well will be from the coarse-grained sediments. As such, in the cases where there are two lithologies present across the screen interval, the water sampled will represent conditions in the coarse-grained interval.														
2 VOCs = Volatile organic compounds (to include analysis for naphthalene).														
3 OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).														
4 SVOCs = Semi volatile organic compounds.														
5 Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).														
IIN/E/W/S Well located outside (north, east, west, or south) of Area II.														
nr Not recorded in the All Wells Database (June 2008).														
TBD To be determined when well is constructed														
(a) Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.														
Qal Quaternary Alluvium														
MCf <sub>g1</sub> Muddy Creek Formation - first fine-grained facies														
MCc <sub>g1</sub> Muddy Creek Formation - first coarse-grained facies														

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LOU-specific analytes identified include:

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- VOCs
- SVOCs
- Wet chemistry analytes
- PCBs

The tables in **BOLD** below present historical data associated with these LOU specific analytes.

**LOU 30 and 56 Table 1 – Soil Characterization Data – Wet Chemistry**

**LOU 30 and 56 Table 2 – Groundwater Characterization Data – Wet Chemistry**

LOU 30 and 56 Table 3 – Soil Characterization Data – Dioxins and Dibenzofurans

**LOU 30 and 56 Table 4 – Soil Characterization Data – Metals**

**LOU 30 and 56 Table 5 – Groundwater Characterization Data – Metals**

LOU 30 and 56 Table 6 – Groundwater Characterization Data – Routine Monitoring

LOU 30 and 56 Table 7 – Soil Characterization Data – Organochlorine Pesticides (OCPs)

LOU 30 and 56 Table 8 – Groundwater Characterization Data – Organochlorine Pesticides (OCPs)

LOU 30 and 56 Table 9 – Soil Characterization Data – Organophosphorus Pesticides (OPPs)

LOU 30 and 56 Table 10 – Groundwater Characterization Data – Organophosphorus Pesticides (OPP)

LOU 30 and 56 Table 11 – Soil Characterization Data – PCBs

LOU 30 and 56 Table 12 – Groundwater Characterization Data – PCBs

**LOU 30 and 56 Table 13 – Soil Characterization Data – Perchlorate**

**LOU 30 and 56 Table 14 – Groundwater Characterization Data – Perchlorate**

LOU 30 and 56 Table 15 – Groundwater Characterization Data – Radionuclides

LOU 30 and 56 Table 16 – Soil Characterization Data – Radionuclides

LOU 30 and 56 Table 17 – Soil Characterization Data – SVOCs

LOU 30 and 56 Table 18 – Groundwater Characterization Data – SVOCs

LOU 30 and 56 Table 19 – Soil Characterization Data – VOCs

LOU 30 and 56 Table 20 – Groundwater Characterization Data – VOCs

LOU 30 and 56 Table 21 – Soil Characterization Data – Long Asbestos Fibers in Respirable Soil Fraction

Notes for Phase A Data Tables are presented at the end of the tables.

**LOUs 30 and 56 Table 1**  
**Soil Characterization Data - Wet Chemistry**

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Sampling Program		Ph A <sup>1</sup>	Ph A	Ph A	Ph A	
Boring No.		SA19	SA19	SA19	SA19	
Sample ID		SA19-0.5	SA19-10	SA19-20	SA19-25	
Sample Depth (ft)		0.5	10	20	25	
Sample Date		11/16/2006	11/16/2006	11/16/2006	11/16/2006	
Wet Chemistry Parameter	MSSL <sup>2</sup> mg/kg					Units
Percent moisture	--	<b>9.4</b>	<b>8.5</b>	<b>8.8</b>	<b>13.9</b>	percent
Alkalinity (as CaCO <sub>3</sub> )	--	55.2 U	<b>97.2</b>	54.8 U	58.1 U	mg/kg
Bicarbonate	--	<b>184</b>	<b>486</b>	<b>583</b>	<b>181</b>	mg/kg
Total Alkalinity	--	<b>196</b>	<b>583</b>	<b>606</b>	<b>219</b>	mg/kg
Ammonia (as N)	--	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ	mg/kg
Cyanide	1.37E+04	R	R	R	R	mg/kg
MBAS	--	4.7 U	4.5 U	4.4 U	4.4 U	mg/kg
pH (solid)	--	<b>8.1</b>	<b>8.8</b>	<b>8.2</b>	<b>8.0</b>	none
Bromide	--	2.8 UJ	2.7 UJ	2.7 UJ	2.9 UJ	mg/kg
Chlorate	--	<b>18.4 J-</b>	5.5 UJ	5.5 UJ	5.8 UJ	mg/kg
Chloride	--	<b>11.8 J-</b>	<b>6.1 J-</b>	<b>3.8 J-</b>	<b>8.5 J-</b>	mg/kg
Nitrate (as N)	--	<b>61.8 J+</b>	<b>4.9 J+</b>	<b>10.3 J+</b>	<b>1.0 J+</b>	mg/kg
Nitrite	--	<b>0.31 J-</b>	<b>0.33 J-</b>	<b>0.78 J-</b>	0.23 UJ	mg/kg
ortho-Phosphate	--	55.2 U	5.5 U	5.5 U	5.8 U	mg/kg
Sulfate	--	<b>16.4 J+</b>	<b>22.1 J+</b>	<b>8160</b>	<b>961</b>	mg/kg
Total Organic Carbon	--	<b>8000 J-</b>	<b>11100 J-</b>	<b>4200 J-</b>	<b>6300 J-</b>	mg/kg

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).

**LOUs 30 and 56 Table 2**  
**Groundwater Characterization Data - Wet Chemistry**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

<b>Sampling Program</b>		Ph A <sup>1</sup>	
<b>Well ID</b>		IAR	
<b>Sample ID</b>		IAR	
<b>Sample Date</b>		12/01/2006	
<b>Wet Chemistry Parameters</b>	<b>MCL<sup>2</sup> mg/L</b>		<b>Units</b>
Total Dissolved Solids	5.00E+02 j	<b>7870</b>	mg/L
Total Suspended Solids	--	<b>18 J</b>	mg/L
Alkalinity (as CaCO <sub>3</sub> )	--	5.0 U	mg/L
Bicarbonate	--	<b>172 J+</b>	mg/L
Total Alkalinity	--	<b>172 J</b>	mg/L
Ammonia (as N)	--	<b>507000</b>	ug/L
MBAS	--	<b>2.3</b>	mg/L
Cyanide	2.00E-01	R	ug/L
pH (liquid)	--	<b>7.4 J</b>	none
Specific Conductance	--	<b>4470</b>	umhos/cm
Bromide	--	25.0 U	mg/L
Chlorate	--	<b>46.8</b>	mg/L
Chloride	2.50E+02	<b>518</b>	mg/L
Nitrate (as N)	1.00E+01	<b>283</b>	mg/L
Nitrite	1.00E+00	<b>138</b>	mg/L
ortho-Phosphate	--	5.0 U	mg/L
Sulfate	2.50E+02 j	<b>1250</b>	mg/L
Total Organic Carbon	--	50.0 U	mg/L

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
  2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
- (j) Secondary Drinking Water Regulation value.

**LOUs 30 and 56 Table 3**  
**Soil Characterization Data - Dioxins and Dibenzofurans**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

<b>Sampling Program</b>				Ph A <sup>1</sup>
<b>Boring No.</b>				SA19
<b>Sample ID</b>				SA19-0.5
<b>Sample Depth (ft)</b>				0.5
<b>Sample Date</b>				11/16/2006
<b>chemical_name:</b>	<b>Method</b>	<b>Unit</b>	<b>MSSL<sup>2</sup> ng/kg</b>	
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (a) ng/kg		ng/kg	--	<b>288</b>
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (a) ng/kg		ng/kg	--	<b>268</b>
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (b) ng/kg		ng/kg	--	<b>288</b>
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (b) ng/kg		ng/kg	--	<b>268</b>
1,2,3,4,6,7,8-Heptachlorodibenzofuran	8290 Screen	ng/kg	--	<b>1676.277</b>
1,2,3,4,6,7,8-Heptachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>1580.034 J</b>
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	<b>145.429</b>
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	<b>145.429</b>
1,2,3,4,7,8,9-Heptachlorodibenzofuran	8290 Screen	ng/kg	--	<b>779.803</b>
1,2,3,4,7,8,9-Heptachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>831.444 J</b>
1,2,3,4,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	<b>669.437</b>
1,2,3,4,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>652.232 J</b>
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	<b>17.947</b>
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	<b>17.947</b>
1,2,3,6,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	<b>425.764</b>
1,2,3,6,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>425.762</b>
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	<b>32.612</b>
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	<b>32.612</b>
1,2,3,7,8,9-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	<b>52.982</b>
1,2,3,7,8,9-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>52.981</b>
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	<b>37.309</b>
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	<b>37.309</b>
1,2,3,7,8-Pentachlorodibenzofuran	8290 Screen	ng/kg	--	<b>314.427</b>
1,2,3,7,8-Pentachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>314.428</b>
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	<b>24.099</b>
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	<b>24.099</b>
2,3,4,6,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	<b>216.800</b>
2,3,4,6,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>216.799</b>
2,3,4,7,8-Pentachlorodibenzofuran	8290 Screen	ng/kg	--	<b>128.464</b>
2,3,4,7,8-Pentachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>128.463</b>
2,3,7,8-Tetrachlorodibenzofuran	8290 Screen	ng/kg	--	<b>357.802</b>
2,3,7,8-Tetrachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>181.098 J</b>
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	1.00E+03 h,v	<b>7.426</b>
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	1.00E+03 h,v	<b>7.426</b>
Octachlorodibenzofuran	8290 Screen	ng/kg	--	<b>4873.315</b>
Octachlorodibenzofuran	SW 846 8290	ng/kg	--	<b>4379.503 J</b>
Octachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	<b>157.307</b>



**LOUs 30 and 56 Table 3 (continued)**  
**Soil Characterization Data - Dioxins and Dibenzofurans**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

<b>Sampling Program</b>				Ph A <sup>1</sup>
<b>Boring No.</b>				SA19
<b>Sample ID</b>				SA19-0.5
<b>Sample Depth (ft)</b>				0.5
<b>Sample Date</b>				11/16/2006
<b>chemical_name:</b>	<b>Method</b>	<b>Unit</b>	<b>MSSL<sup>2</sup> ng/kg</b>	
Octachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	157.306 U
Tetrachlorinated Dibenzofurans, (Total)	SW 846 8290	ng/kg	--	2089.117 J
Total HpCDD	SW 846 8290	ng/kg	--	228.544
Total HpCDF	SW 846 8290	ng/kg	--	3521.881 J
Total HxCDD	SW 846 8290	ng/kg	--	260.194
Total HxCDF	SW 846 8290	ng/kg	--	2886.323 J
Total PeCDD	SW 846 8290	ng/kg	--	229.389
Total PeCDF	SW 846 8290	ng/kg	--	2623.048
Total TCDD	SW 846 8290	ng/kg	--	205.418

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
  - (a) Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).
  - (b) Calculated assuming 1/2 detection limit as proxy for non-detected congeners and 2006 TEFs.
  - (h) Dioxins and furans were expressed as 2,3,7,8- TCDD TEQ (toxic equivalents), calculated using the TEFs (Toxic Equivalency Factors) published by Van den Berg et al., 2006.
  - (v) USEPA. 1998. Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites. OSWER Directive 9200.4-26. April, 1998. A value of 1000 ng/kg is applicable to residential soils. The range of 5000 to 20000 ng/kg is applicable to commercial/industrial soils. The Agency for Toxic Substances and Disease Registry (ATSDR) provides a screening level of 50 ng/kg for dioxin in residential soil [<http://www.atsdr.cdc.gov/substances/dioxin/policy/>].

**LOUs 30 and 56 Table 4  
Soil Characterization Data - Metals**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	Ph A	Ph A	Ph A	
Boring No.		SA19	SA19	SA19	SA19	
Sample ID		SA19-0.5	SA19-10	SA19-20	SA19-25	
Sample Depth (ft)		0.5	10	20	25	
Sample Date		11/16/2006	11/16/2006	11/16/2006	11/16/2006	
Metals	MSSL <sup>2</sup> mg/kg					Units
Aluminum	1.00E+05	7090	6620	6020	6280	mg/kg
Antimony	4.50E+02	0.17 J-	0.15 J-	0.16 J-	0.12 J-	mg/kg
Arsenic	2.80E+02	2.2	3.9	14.7	16.0	mg/kg
Barium	1.00E+05	150 J	145 J	131 J	105	mg/kg
Beryllium	2.20E+03	0.46	0.44	0.38	0.33	mg/kg
Boron	1.00E+05	2.8 J-	4.1 J-	10.2 J-	10.0 J	mg/kg
Cadmium	5.60E+02	0.094	0.065	0.073	0.073	mg/kg
Calcium	--	15000	25900	25200	44000	mg/kg
Chromium (Total)	7.10E+01	10.3 J-	8.4 J-	9.3 J-	14.0	mg/kg
Chromium-hexavalent	5.00E+02	0.22 U	9.0	0.11 J	0.18 J	mg/kg
Cobalt	2.10E+03	6.2 J-	5.0 J-	3.3 J-	3.3	mg/kg
Copper	4.20E+04	12.4 J-	10.7 J-	7.1 J-	6.9 J-	mg/kg
Iron	1.00E+05	11800	9700	6940	7120	mg/kg
Lead	8.00E+02	9.0	6.8	5.3	5.2	mg/kg
Magnesium	--	6680 J-	9230 J-	7870 J-	18600	mg/kg
Manganese	3.50E+04	275	180	148	154	mg/kg
Molybdenum	5.70E+03	0.45 J	0.41 J	0.44 J	0.66	mg/kg
Nickel	2.30E+04	12.7 J-	11.0 J-	8.6 J-	8.6 J-	mg/kg
Platinum	--	0.013 J	0.013 J	0.012 J	0.012 U	mg/kg
Potassium	--	1900	1630	1970	1780	mg/kg
Selenium	5.70E+03	0.12 U	0.12 U	0.12 U	0.13 U	mg/kg
Silver	5.70E+03	0.14 J	0.12 J	0.11 J	0.11 J	mg/kg
Sodium	--	214 J-	302 J-	324 J-	466	mg/kg
Strontium	1.00E+05	84.3 J	160 J	739 J	178 J-	mg/kg
Thallium	--	0.098 J	0.077 J	0.082 J	0.081 U	mg/kg
Tin	--	0.51	0.47	0.39	0.38	mg/kg
Titanium	--	529 J+	464 J+	326 J+	366 J+	mg/kg
Tungsten	--	0.24 J-	0.28 J-	0.56 J-	0.36 J-	mg/kg
Uranium	--	0.85	1.4	2.5	2.3	mg/kg
Vanadium	5.70E+03	30.9 J-	30.5 J-	30.5 J-	22.7	mg/kg
Zinc	1.00E+05	24.9 J-	21.6 J-	17.9 UJ	16.6 UJ	mg/kg
Mercury	3.41E+02 (t)	0.010 U	0.0073 UJ	0.0095 U	0.0078 UJ	mg/kg

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
  2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
- (t) Value for mercury and compounds.

**LOUs 30 and 56 Table 5  
Groundwater Characterization Data - Metals**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	
Well ID:		I-AR	
Sample ID		I-AR-Z	
Sample Date		05/08/2007	
Metals	MCL <sup>2</sup> ug/L		Unit
Aluminum	5.00E+01 j	7.9 U	ug/L
Antimony	6.00E+00	1.1	ug/L
Arsenic	1.00E+01	110	ug/L
Barium	2.00E+03	36.3	ug/L
Beryllium	4.00E+00	1.8 U	ug/L
Boron	7.30E+03	2980	ug/L
Cadmium	5.00E+00	0.10 J	ug/L
Calcium	--	540000	ug/L
Chromium (Total)	1.00E+02	291 J-	ug/L
Chromium-hexavalent	1.09E+02	302 J	ug/L
Cobalt	7.30E+02	0.94 J-	ug/L
Copper	1.30E+03 p	2.7 U	ug/L
Iron	3.00E+02 j	188 UJ	ug/L
Lead	1.50E+01 u	0.49 U	ug/L
Magnesium	1.50E+05 a	248000	ug/L
Manganese	5.00E+01 j	29.8 U	ug/L
Molybdenum	1.82E+02	26.8	ug/L
Nickel	7.30E+02	10.3 UJ	ug/L
Platinum	--	1.1	ug/L
Potassium	--	34800	ug/L
Selenium	5.00E+01	1.0 U	ug/L
Silver	1.00E+02 j	0.20 U	ug/L
Sodium	--	918000	ug/L
Strontium	2.19E+04	8820	ug/L
Thallium	2.00E+00	0.71 U	ug/L
Tin	2.19E+04	0.20 U	ug/L
Titanium	1.46E+05	4.2 U	ug/L
Tungsten	--	0.82 UJ	ug/L
Uranium	3.00E+01	37.5 J+	ug/L
Vanadium	3.65E+01	32.0 U	ug/L
Zinc	5.00E+03 j	40.2 UJ	ug/L
Mercury	2.00E+00	0.093 U	ug/L

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
  - (j) Secondary Drinking Water Regulation value.
  - (p) The national primary drinking water regulations (b) lists a treatment technology action level of 1.3 mg/l as the MCL for Copper. Therefore, the secondary value is not used.
  - (u) See footnote (b). Treatment technology action level.
  - (a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.

**LOUs 30 and 56 Table 6**  
**Groundwater Characterization Data - Routine Monitoring<sup>1</sup>**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Well ID	Date	Depth to water (ft)	Perchlorate mg/L	Qual	MCL <sup>2</sup> mg/L	Total Chromium mg/L	Qual	MCL <sup>2</sup> mg/L	TDS mg/L	Qual	MCL <sup>2</sup> mg/L	Nitrate (as N) mg/L	Qual	MCL <sup>2</sup> mg/L	Chlorate mg/L	Qual	MCL <sup>2</sup> mg/L
I-AR	2/2/2006	27.04	2800	d	1.80E-02 a,m	0.023	d	1.00E-01			5.00E+02			1.00E+01			--
I-AR	5/2/2006	28.10	2800	d	1.80E-02 a,m	<0.01	ud	1.00E-01	5830		5.00E+02			1.00E+01			--
I-AR	8/1/2006	28.64	2630	d	1.80E-02 a,m	0.058	d	1.00E-01	5090		5.00E+02			1.00E+01			--
I-AR	1/30/2007	28.78	3120		1.80E-02 a,m	0.14		1.00E-01	5940		5.00E+02			1.00E+01			--
I-AR	5/1/2007	42.33	3670		1.80E-02 a,m	0.53		1.00E-01	6850		5.00E+02			1.00E+01			--
I-AR	7/31/2007	41.99	4020		1.80E-02 a,m	0.49		1.00E-01	6850		5.00E+02			1.00E+01			--
I-B	1/31/2006	30.61	2100	d	1.80E-02 a,m	0.33	d	1.00E-01			5.00E+02			1.00E+01			--
I-B	5/2/2006	30.40	3000	d	1.80E-02 a,m	0.38	d	1.00E-01	5740		5.00E+02			1.00E+01			--
I-B	8/1/2006	31.18	2270	d	1.80E-02 a,m	0.26	d	1.00E-01	5980		5.00E+02			1.00E+01			--
I-B	10/31/2006	32.91	1720	d	1.80E-02 a,m	0.14		1.00E-01	5860		5.00E+02			1.00E+01			--
I-B	1/30/2007	34.29	1280		1.80E-02 a,m	0.15		1.00E-01	5230		5.00E+02			1.00E+01			--
I-B	5/1/2007	35.51	900		1.80E-02 a,m	0.15		1.00E-01	5120		5.00E+02			1.00E+01			--
I-B	7/31/2007	36.22	1150		1.80E-02 a,m	0.22		1.00E-01	4930		5.00E+02			1.00E+01			--
M-64	1/31/2006	25.63	1000	d	1.80E-02 a,m	8	d	1.00E-01			5.00E+02			1.00E+01			--
M-64	5/2/2006	25.63	990	d	1.80E-02 a,m	7.3	d	1.00E-01	6090		5.00E+02			1.00E+01			--
M-64	8/1/2006	26.75	846	d	1.80E-02 a,m	8.2	d	1.00E-01	7040		5.00E+02			1.00E+01			--
M-64	10/31/2006	27.04	737	d	1.80E-02 a,m	6.4	d	1.00E-01	6290		5.00E+02			1.00E+01			--
M-64	1/30/2007	27.63	997		1.80E-02 a,m	8.8		1.00E-01	8550		5.00E+02			1.00E+01			--
M-64	5/4/2007	28.89	709		1.80E-02 a,m	7.2		1.00E-01	7900		5.00E+02			1.00E+01			--
M-64	7/31/2007	29.27	821		1.80E-02 a,m	8.2		1.00E-01	8170		5.00E+02			1.00E+01			--

**Notes:**

1. ENSR, 2007, Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July-September 2007, November 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
  - (a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
  - (m) Equal to the provisional action level derived by NDEP as referenced in "Defining a Perchlorate Drinking Water Standard". NDEP Bureau of Corrective Action. URL [[http://ndep.nv.gov/bca/perchlorate02\\_05.htm](http://ndep.nv.gov/bca/perchlorate02_05.htm)].
  - (j) Secondary Drinking Water Regulation value.

< = less than the reporting limit  
Blank cell or --- = no data and or no qualifier  
Qual = data qualifiers applied by laboratory or during data validation  
TDS = Total Dissolved Solids  
mg/l = milligram per liter

Laboratory Qualifiers:

d = the sample was diluted  
u = the analyte was not detected above the sample reporting limit  
ud = the sample was diluted and was not detected above the sample reporting limit

Validation Qualifiers:

J = the result is an estimated quantity  
J- = the result is an estimated quantity and the result may be biased low  
U = the analyte was analyzed for, but was not detected above the sample reporting limit  
UJ = the sample was not detected above the sample reporting limit and the reporting limit is approximate

**LOUs 30 and 56 Table 7**  
**Soil Characterization Data - Organochlorine Pesticides (OCPs)**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	
Boring No.		SA19	
Sample ID		SA19-0.5	
Sample Depth (ft)		0.5	
Sample Date		11/16/2006	
Organochlorine Pesticides	MSSL <sup>2</sup> mg/kg		Unit
4,4'-DDD	1.10E+01	0.0019 U	mg/kg
4,4'-DDE	7.80E+00	0.0019 U	mg/kg
4,4'-DDT	7.80E+00	0.0019 U	mg/kg
Aldrin	1.10E-01	0.0019 U	mg/kg
Alpha-BHC	4.00E-01	0.0019 U	mg/kg
Alpha-chlordane	1.40E+00 (y)	0.0019 U	mg/kg
Beta-BHC	1.40E+00	0.0019 U	mg/kg
Delta-BHC	--	0.0019 U	mg/kg
Dieldrin	1.20E-01	0.0019 U	mg/kg
Endosulfan I	4.10E+03 (aa)	0.0019 U	mg/kg
Endosulfan II	4.10E+03 (aa)	0.0019 U	mg/kg
Endosulfan Sulfate	4.10E+03 (aa)	0.0019 U	mg/kg
Endrin	2.10E+02	0.0019 U	mg/kg
Endrin Aldehyde	2.10E+02 (k)	0.0019 U	mg/kg
Endrin Ketone	2.10E+02 (k)	0.0019 U	mg/kg
Gamma-BHC (Lindane)	1.90E+00	0.0019 U	mg/kg
Gamma-Chlordane	1.40E+00 (y)	0.0019 U	mg/kg
Heptachlor	4.30E-01	0.0019 U	mg/kg
Heptachlor Epoxide	2.10E-01	0.0019 U	mg/kg
Methoxychlor	3.40E+03	0.0036 U	mg/kg
Tech-Chlordane	1.40E+00	0.011 U	mg/kg
Toxaphene	1.70E+00	0.055 U	mg/kg

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
  2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
- (y) Value for chlordane (technical) used as surrogate for alpha-chlordane and gamma-chlordane based on structural similarities.
- (aa) Value for endosulfan used as surrogate for endosulfan I, endosulfan II and endosulfan sulfate based on structural similarities.
- (k) Value for endrin used as surrogate for endrin aldehyde and endrin ketone due to structural similarities.

**LOUs 30 and 56 Table 8**  
**Groundwater Characterization Data - Organochlorine Pesticides (OCP)**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	
Well ID		I-AR	
Sample ID		I-AR	
Sample Date		12/01/2006	
Organochlorine Pesticides	MCL <sup>2</sup> ug/L		Unit
4,4'-DDD	2.80E-01	0.050 U	ug/L
4,4'-DDE	1.98E-01	0.050 U	ug/L
4,4'-DDT	1.98E-01	0.050 U	ug/L
Aldrin	4.00E-03	0.050 U	ug/L
Alpha-BHC	1.10E-02	0.050 U	ug/L
Alpha-chlordane	2.00E+00 (l)	0.050 U	ug/L
Beta-BHC	3.74E-02	0.050 U	ug/L
Delta-BHC	1.10E-02 (z)	0.050 U	ug/L
Dieldrin	4.20E-03 (z)	0.050 U	ug/L
Endosulfan I	2.19E+02 (aa)	0.050 U	ug/L
Endosulfan II	2.19E+02 (aa)	0.050 U	ug/L
Endosulfan Sulfate	2.19E+02 (aa)	0.050 U	ug/L
Endrin	2.00E+00	0.050 U	ug/L
Endrin Aldehyde	1.09E+01 (k)	0.050 U	ug/L
Endrin Ketone	1.09E+01 (k)	0.050 U	ug/L
Gamma-BHC (Lindane)	2.00E-01	0.050 U	ug/L
Gamma-Chlordane	2.00E+00 (l)	0.050 U	ug/L
Heptachlor	4.00E-01	0.050 U	ug/L
Heptachlor Epoxide	2.00E-01	0.050 U	ug/L
Methoxychlor	4.00E+01	0.10 U	ug/L
Tech-Chlordane	2.00E+00 (l)	0.50 U	ug/L
Toxaphene	3.00E+00	2.0 U	ug/L

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
  - (l) Value for chlordane used as surrogate for alpha-chlordane, chlordane (technical) and gamma-chlordane due to structural similarities.
  - (z) Value for alpha-BHC used as surrogate for delta-BHC based on structural similarities.
  - (aa) Value for endosulfan used as surrogate for endosulfan I, endosulfan II and endosulfan sulfate based on structural similarities.
  - (k) Value for endrin used as surrogate for endrin aldehyde and endrin ketone due to structural similarities.

**LOUs 30 and 56 Table 9**  
**Soil Characterization Data - Organophosphorus Pesticides (OPPs)**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	
Boring No.		SA19	
Sample ID		SA19-0.5	
Sample Depth (ft)		0.5	
Sample Date		11/16/2006	
OPPs	MSSL <sup>2</sup> mg/kg		Unit
Azinphos-methyl	--	0.014 UJ	mg/kg
Bolstar	--	0.014 U	mg/kg
Chlorpyrifos	2.10E+03	0.022 U	mg/kg
Coumaphos	--	0.014 UJ	mg/kg
Demeton-O	--	0.043 U	mg/kg
Demeton-S	--	0.017 U	mg/kg
Diazinon	6.20E+02	0.024 U	mg/kg
Dichlorvos	6.60E+00	0.025 U	mg/kg
Dimethoate	--	0.024 UJ	mg/kg
Disulfoton	2.70E+01	0.053 U	mg/kg
EPN	--	0.014 UJ	mg/kg
Ethoprop	--	0.017 U	mg/kg
Ethyl Parathion	4.10E+03	0.020 U	mg/kg
Famphur	--	0.014 UJ	mg/kg
Fensulfothion	--	0.014 U	mg/kg
Fenthion	1.70E+02 (ff)	0.036 U	mg/kg
Malathion	1.40E+04	0.017 U	mg/kg
Merphos	--	0.033 U	mg/kg
Methyl parathion	1.70E+02	0.022 U	mg/kg
Mevinphos	--	0.017 U	mg/kg
Naled	1.40E+03	0.036 UJ	mg/kg
Phorate	--	0.022 U	mg/kg
Ronnel	3.40E+04	0.020 UJ	mg/kg
Stirphos	--	0.017 UJ	mg/kg
Sulfotep	--	0.022 U	mg/kg
Thionazin	--	0.020 U	mg/kg
Tokuthion	--	0.022 U	mg/kg
Trichloronate	--	0.022 U	mg/kg

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
  2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
- (ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.

**LOUs 30 and 56 Table 10**  
**Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	
	Well ID	I-AR	
	Sample ID	I-AR	
	Sample Date	12/01/2006	
OPPs	MCL <sup>2</sup> ug/L		Unit
Azinphos-methyl	--	2.5 UJ	ug/L
Bolstar	--	1.0 U	ug/L
Chlorpyrifos	1.09E+02	1.0 U	ug/L
Coumaphos	--	1.0 U	ug/L
Demeton-O	1.46E+00 (cc)	1.0 U	ug/L
Demeton-S	1.46E+00 (cc)	1.0 U	ug/L
Diazinon	3.28E+01	1.0 U	ug/L
Dichlorvos	2.32E-01	1.0 U	ug/L
Dimethoate	7.30E+00	1.0 U	ug/L
Disulfoton	1.46E+00	0.50 U	ug/L
EPN	3.65E-01	1.2 U	ug/L
Ethoprop	--	0.50 U	ug/L
Ethyl Parathion	9.12E+00 (tt)	1.0 U	ug/L
Famphur	--	1.0 U	ug/L
Fensulfothion	--	2.5 U	ug/L
Fenthion	9.10E+00 (ff)	2.5 U	ug/L
Malathion	7.30E+02	1.2 U	ug/L
Merphos	1.09E+00	5.0 U	ug/L
Methyl parathion	9.12E+00	4.0 U	ug/L
Mevinphos	--	6.2 U	ug/L
Naled	7.30E+01	1.0 UJ	ug/L
Phorate	7.30E+00	1.2 U	ug/L
Ronnel	1.82E+03	10 U	ug/L
Stirphos	--	3.5 U	ug/L
Sulfotep	1.82E+01	1.5 U	ug/L
Thionazin	--	1.0 U	ug/L
Tokuthion	--	1.6 U	ug/L
Trichloronate	--	0.50 U	ug/L

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.  
(cc) Value for demeton used as surrogate for demeton-o and demeton-s based on structural similarities.  
(tt) Value for parathion-methyl used as surrogate for parathion-ethyl due to structural similarities.  
(ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.



**LOUs 30 and 56 Table 11**  
**Soil Characterization Data - PCBs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	Ph A	Ph A	Ph A	
Boring ID		SA19	SA19	SA19	SA19	
Sample ID		SA19-0.5	SA19-10	SA19-20	SA19-25	
Sample Depth (ft)		0.5	10	20	25	
Sample Date		11/16/2006	11/16/2006	11/16/2006	11/16/2006	
PCBs	MSSL <sup>2</sup> mg/kg					Unit
Aroclor-1016	2.40E+01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg
Aroclor-1221	8.30E-01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg
Aroclor-1232	8.30E-01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg
Aroclor-1242	8.30E-01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg
Aroclor-1248	8.30E-01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg
Aroclor-1254	8.30E-01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg
Aroclor-1260	8.30E-01 (i)	0.036 U	0.036 U	0.036 U	0.038 U	mg/kg

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).  
(i) For PCBs, the individual Aroclors were compared to the TSCA action level of 10 mg/kg, for high occupancy, restricted (non-residential) use. (40 CFR Part 761; 63 FR 35383-35474, June 29, 1998).

**LOUs 30 and 56 Table 12  
Groundwater Characterization Data - PCBs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	
Well ID		I-AR	
Sample ID		I-AR	
Sample Date		12/01/2006	
PCBs	MCL <sup>2</sup> ug/L		Unit
Aroclor-1016	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1221	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1232	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1242	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1248	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1254	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1260	5.00E-01 (bb)	0.10 U	ug/L

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.  
(bb) Value for total PCBs.

**LOUs 30 and 56 Table 13  
Soil Characterization Data - Perchlorate**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

<b>Boring ID</b>	<b>Sample ID</b>	<b>Sample Depth (ft)</b>	<b>Sample Date</b>	<b>Perchlorate ug/kg</b>	<b>MSSL<sup>1</sup> ug/kg</b>	<b>Sampling Program</b>
SA19	SA19-0.5	0.5	11/16/2006	<b>217000</b>	7.95E+05	Ph A <sup>2</sup>
SA19	SA19-10	10	11/16/2006	<b>67700</b>	7.95E+05	Ph A
SA19	SA19-20	20	11/16/2006	<b>86100</b>	7.95E+05	Ph A
SA19	SA19-25	25	11/16/2006	<b>47200</b>	7.95E+05	Ph A

**Notes:**

1. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

**LOUs 30 and 56 Table 14**  
**Groundwater Characterization Data - Perchlorate**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Sample Date	Perchlorate	Units	MCL <sup>1</sup> ug/L	Sampling Program
I-AR	I-AR	12/01/2006	<b>4160000</b>	ug/L	1.80E+01 a,(m)	Ph A <sup>2</sup>

**Notes:**

1. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
  2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
- (a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
- (m) Equal to the provisional action level derived by NDEP as referenced in "Defining a Perchlorate Drinking Water Standard". NDEP Bureau of Corrective Action. URL [[http://ndep.nv.gov/bca/perchlorate02\\_05.htm](http://ndep.nv.gov/bca/perchlorate02_05.htm)].

**LOUs 30 and 56 Table 15  
Soil Characterization Data - Radionuclides**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

				<b>Ra-226</b>	<b>Ra-228</b>	<b>Th-228</b>	<b>Th-230</b>	<b>Th-232</b>	<b>U-233/234</b>	<b>U-235/236</b>	<b>U-238</b>	
				(gamma)	(gamma)	(TH MOD)	(TH MOD)	(TH MOD)	(U MOD)	(U MOD)	(U MOD)	
				pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	
<b>Boring ID Number</b>	<b>Sample ID</b>	<b>Sample Depth (ft)</b>	<b>Date</b>									<b>Sampling Program</b>
SA 19	SA19-0.5	0.5	11/16/2006	<b>1.16 J-</b>	<b>2 J-</b>							Ph A <sup>1</sup>
SA 19	SA19-10	10	11/16/2006	<b>1.43 J-</b>	<b>1.63 J-</b>							Ph A
SA 19	SA19-20	20	11/16/2006	<b>1.76 J-</b>	<b>1.7 J-</b>							Ph A
SA 19	SA19-25	25	11/16/2006	<b>1.57 J-</b>	<b>1.38 J-</b>							Ph A

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

**LOUs 30 and 56 Table 16  
Groundwater Characterization Data - Radionuclides**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Date	Ra-226	Ra-228	Th-228	Th-230	Th-232	U-233/234	U-235/236	U-238	Sampling Program
			pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
IAR	IAR-Z	05/08/2007	1.67 J	1.30 B							Ph A <sup>1</sup>

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

**LOUs 30 and 56 Table 17  
Soil Characterization Data - SVOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A <sup>1</sup>	Ph A	Ph A	Ph A
Boring No.			SA 19	SA 19	SA 19	SA 19
Sample ID			SA19-0.5	SA19-10	SA19-20	SA19-25
Sample Depth (ft)			0.5	10	20	25
Sample Date			11/16/2006	11/16/2006	11/16/2006	11/16/2006
SVOC	Analytical Method	MSSL <sup>2</sup> ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,4-Dioxane	non-SIM	1.70E+05	360 U	360 U	360 U	380 U
2-Methylnaphthalene	non-SIM	2.10E+05 (jj)	360 U	360 U	360 U	380 U
2-Methylnaphthalene	SIM	2.10E+05 (jj)				
Acenaphthene	non-SIM	3.30E+07	360 U	360 U	360 U	380 U
Acenaphthene	SIM	3.30E+07				
Acenaphthylene	non-SIM	3.30E+07 (pp)	360 U	360 U	360 U	380 U
Acenaphthylene	SIM	3.30E+07 (pp)				
Anthracene	non-SIM	1.00E+08	360 U	360 U	360 U	380 U
Anthracene	SIM	1.00E+08				
Benz(a)anthracene	non-SIM	2.30E+03	360 U	360 U	360 U	380 U
Benz(a)anthracene	SIM	2.30E+03				
Benzo(a)pyrene	non-SIM	2.30E+02	360 U	360 U	360 U	380 U
Benzo(a)pyrene	SIM	2.30E+02				
Benzo(b)fluoranthene	non-SIM	2.30E+03	360 U	360 U	360 U	380 U
Benzo(b)fluoranthene	SIM	2.30E+03				
Benzo(g,h,i)perylene	non-SIM	3.20E+07 (w)	360 U	360 U	360 U	380 U
Benzo(g,h,i)perylene	SIM	3.20E+07 (w)				
Benzo(k)fluoranthene	non-SIM	2.30E+04	360 U	360 U	360 U	380 U
Benzo(k)fluoranthene	SIM	2.30E+04				
bis(2-Ethylhexyl)phthalate	non-SIM	1.40E+05	360 U	360 U	360 U	380 U
Butyl benzyl phthalate	non-SIM	2.40E+05	360 U	360 U	360 U	380 U
Chrysene	non-SIM	2.30E+05	360 U	360 U	360 U	380 U
Chrysene	SIM	2.30E+05				
Dibenz(a,h)anthracene	non-SIM	2.30E+02	360 U	360 U	360 U	380 U
Dibenz(a,h)anthracene	SIM	2.30E+02				
Diethyl phthalate	non-SIM	1.00E+08	360 U	360 U	360 U	380 U
Dimethyl phthalate	non-SIM	1.00E+08	360 U	360 U	360 U	380 U
Di-N-Butyl phthalate	non-SIM	6.80E+07	360 U	360 U	360 U	380 U
Di-N-Octyl phthalate	non-SIM	--	360 U	360 U	360 U	380 U
Fluoranthene	non-SIM	2.40E+07	360 U	360 U	360 U	380 U
Fluoranthene	SIM	2.40E+07				
Fluorene	non-SIM	2.60E+07	360 U	360 U	360 U	380 U
Fluorene	SIM	2.60E+07				
Hexachlorobenzene	non-SIM	1.20E+03	360 U	360 U	360 U	380 U
Hexachlorobenzene	SIM	1.20E+03				
Indeno(1,2,3-cd)pyrene	non-SIM	2.30E+03	360 U	360 U	360 U	380 U
Indeno(1,2,3-cd)pyrene	SIM	2.30E+03				
Naphthalene	non-SIM	2.10E+05	5.5 U	5.5 U	5.5 U	5.8 U
Naphthalene	non-SIM	2.10E+05	360 U	360 U	360 U	380 U
Naphthalene	SIM	2.10E+05				
Nitrobenzene	non-SIM	1.10E+05	360 U	360 U	360 U	380 U

**LOUs 30 & 56 Table 17 (continued)  
Soil Characterization Data - SVOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A <sup>1</sup>	Ph A	Ph A	Ph A
Boring No.			SA 19	SA 19	SA 19	SA 19
Sample ID			SA19-0.5	SA19-10	SA19-20	SA19-25
Sample Depth (ft)			0.5	10	20	25
Sample Date			11/16/2006	11/16/2006	11/16/2006	11/16/2006
SVOC	Analytical Method	MSSL <sup>2</sup> ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Octachlorostyrene	non-SIM	--	360 U	360 U	360 U	380 U
Phenanthrene	non-SIM	1.00E+08 (n)	360 U	360 U	360 U	380 U
Phenanthrene	SIM	1.00E+08 (n)				
Pyrene	non-SIM	3.20E+07	360 U	360 U	360 U	380 U
Pyrene	SIM	3.20E+07				
Pyridine	non-SIM	6.80E+05	1800 U	1700 U	1800 U	1900 U

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
  2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
- (jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.  
 (pp) Value for acenaphthene used as surrogate for acenaphthylene based on structural similarities.  
 (w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.  
 (n) Value for anthracene used as surrogate for phenanthrene due to structural similarities.



**LOUs 30 and 56 Table 18  
Groundwater Characterization Data - SVOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A <sup>1</sup>
Well No.			I-AR
Sample ID			I-AR
Sample Date			12/01/2006
SVOCs	Analytic Method	MCL <sup>2</sup> ug/L	ug/L
1,4-Dioxane	non-SIM	6.11E+00	10 U
2-Methylnaphthalene	non-SIM	6.20E+00 (jj)	10 U
2-Methylnaphthalene	SIM	6.20E+00 (jj)	
Acenaphthene	non-SIM	3.65E+02	10 U
Acenaphthene	SIM	3.65E+02	
Acenaphthylene	non-SIM	3.65E+02 (pp)	10 UJ
Acenaphthylene	SIM	3.65E+02 (pp)	
Anthracene	non-SIM	1.83E+03	10 U
Anthracene	SIM	1.83E+03	
Benz(a)anthracene	non-SIM	9.21E-02	10 U
Benz(a)anthracene	SIM	9.21E-02	
Benzo(a)pyrene	non-SIM	2.00E-01	10 U
Benzo(a)pyrene	SIM	2.00E-01	
Benzo(b)fluoranthene	non-SIM	9.21E-02	10 U
Benzo(b)fluoranthene	SIM	9.21E-02	
Benzo(g,h,i)perylene	non-SIM	1.83E+02 (w)	10 U
Benzo(g,h,i)perylene	SIM	1.83E+02 (w)	
Benzo(k)fluoranthene	non-SIM	9.21E-01	10 U
Benzo(k)fluoranthene	SIM	9.21E-01	
bis(2-Ethylhexyl)phthalate	non-SIM	6.00E+00	10 U
Butyl benzyl phthalate	non-SIM	7.30E+03	10 U
Chrysene	non-SIM	9.21E+00	10 U
Chrysene	SIM	9.21E+00	
Dibenz(a,h)anthracene	non-SIM	9.21E-03	10 U
Dibenz(a,h)anthracene	SIM	9.21E-03	
Diethyl phthalate	non-SIM	2.92E+04	10 U
Dimethyl phthalate	non-SIM	3.65E+05	10 U
Di-N-Butyl phthalate	non-SIM	3.65E+03	10 U
Di-N-Octyl phthalate	non-SIM	1.46E+03	10 U
Fluoranthene	non-SIM	1.46E+03	10 U
Fluoranthene	SIM	1.46E+03	
Fluorene	non-SIM	2.43E+02	10 U
Fluorene	SIM	2.43E+02	
Hexachlorobenzene	non-SIM	1.00E+00	10 U
Hexachlorobenzene	SIM	1.00E+00	
Indeno(1,2,3-cd)pyrene	non-SIM	9.21E-02	10 U
Indeno(1,2,3-cd)pyrene	SIM	9.21E-02	
Naphthalene	non-SIM	6.20E+00	5.0 U
Naphthalene	non-SIM	6.20E+00	10 U
Naphthalene	SIM	6.20E+00	
Nitrobenzene	non-SIM	3.40E+00	10 U
Octachlorostyrene	non-SIM	--	10 U

**LOUs 30 & 56 Table 18 (continued)**  
**Groundwater Characterization Data - SVOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A <sup>1</sup>
Well No.			I-AR
Sample ID			I-AR
Sample Date			12/01/2006
SVOCs	Analytic Method	MCL <sup>2</sup> ug/L	ug/L
Phenanthrene	non-SIM	1.80E+03 (n)	10 U
Phenanthrene	SIM	1.80E+03 (n)	
Pyrene	non-SIM	1.83E+02	10 U
Pyrene	SIM	1.83E+02	
Pyridine	non-SIM	3.65E+01	20 U

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
  - (jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.
  - (pp) Value for acenaphthene used as surrogate for acenaphthylene based on structural similarities.
  - (w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.
  - (n) Value for anthracene used as surrogate for phenanthrene due to structural similarities.

**LOUs 30 and 56 Table 19  
Soil Characterization Data - VOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	Ph A	Ph A	Ph A
Boring No.		SA 19	SA 19	SA 19	SA 19
Sample ID		SA19-0.5	SA19-10	SA19-20	SA19-25
Sample Depth (ft)		0.5	10	20	25
Sample Date		11/16/2006	11/16/2006	11/16/2006	11/16/2006
VOCs	MSSL <sup>2</sup> ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Naphthalene	2.10E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,1,1,2-Tetrachloroethane	7.60E+03	5.5 U	5.5 U	5.5 U	5.8 U
1,1,1-Trichloroethane	1.40E+06	5.5 U	5.5 U	5.5 U	5.8 U
1,1,2,2-Tetrachloroethane	9.70E+02	5.5 U	5.5 U	5.5 U	5.8 U
1,1,2-Trichloroethane	2.10E+03	5.5 U	5.5 U	5.5 U	5.8 U
1,1-Dichloroethane	2.30E+06	5.5 U	5.5 U	5.5 U	5.8 U
1,1-Dichloroethene	4.70E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,1-Dichloropropene	1.75E+03 (gg)	5.5 U	5.5 U	5.5 U	5.8 U
1,2,3-Trichlorobenzene	2.60E+05 (hh)	5.5 U	5.5 U	5.5 U	5.8 U
1,2,3-Trichloropropane	1.60E+03	5.5 U	5.5 U	5.5 U	5.8 U
1,2,4-Trichlorobenzene	2.60E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,2,4-Trimethylbenzene	2.20E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,2-Dibromo-3-chloropropane	2.00E+01	5.5 U	5.5 U	5.5 U	5.8 U
1,2-Dichlorobenzene	3.70E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,2-Dichloroethane	8.40E+02	5.5 U	5.5 U	5.5 U	<b>3.2 J</b>
1,2-Dichloropropane	8.50E+02	5.5 U	5.5 U	5.5 U	5.8 U
1,3,5-Trimethylbenzene	7.80E+04	5.5 U	5.5 U	5.5 U	5.8 U
1,3-Dichlorobenzene	1.40E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,3-Dichloropropane	4.10E+05	5.5 U	5.5 U	5.5 U	5.8 U
1,4-Dichlorobenzene	8.10E+03	<b>17</b>	<b>15</b>	<b>15</b>	5.8 U
2,2-Dichloropropane	8.50E+02 (ii)	5.5 U	5.5 U	5.5 U	5.8 U
2-Butanone	3.40E+07	11 U	11 U	11 U	12 U
2-Chlorotoluene	5.10E+05	5.5 U	5.5 U	5.5 U	5.8 U
2-Hexanone	1.72E+07 (nn)	11 UJ	11 UJ	11 UJ	12 UJ
2-Methoxy-2-methyl-butane	--	5.5 U	5.5 U	5.5 U	5.8 U
4-Chlorotoluene	5.10E+05 (ww)	5.5 U	5.5 U	5.5 U	5.8 U
4-Isopropyltoluene	--	5.5 U	5.5 U	5.5 U	5.8 U
4-Methyl-2-pentanone	1.70E+07	11 U	11 U	11 U	12 U
Acetone	6.00E+07	11 U	11 U	22 U	24 UJ
Benzene	1.60E+03	5.5 U	5.5 U	5.5 U	5.8 U
Bromobenzene	1.20E+05	5.5 U	5.5 U	5.5 U	5.8 U
Bromochloromethane	1.75E+03 (qq)	5.5 U	5.5 U	5.5 U	5.8 U
Bromodichloromethane	2.60E+03	5.5 U	5.5 U	5.5 U	5.8 U
Bromoform	2.40E+05	5.5 U	5.5 U	5.5 U	5.8 U
Bromomethane	1.50E+04	11 UJ	11 UJ	11 UJ	12 UJ
Carbon tetrachloride	5.80E+02	5.5 U	5.5 U	5.5 U	5.8 U
Chlorobenzene	5.00E+05	5.5 U	5.5 U	5.5 U	5.8 U
Chloroethane	7.20E+03	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
Chloroform	5.80E+02	5.5 U	5.5 U	5.5 U	5.8 U
Chloromethane	1.70E+05	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
cis-1,2-Dichloroethene	1.60E+05	5.5 U	5.5 U	5.5 U	5.8 U

**LOUs 30 and 56 Table 19 (continued)**  
**Soil Characterization Data - VOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>	Ph A	Ph A	Ph A
Boring No.		SA 19	SA 19	SA 19	SA 19
Sample ID		SA19-0.5	SA19-10	SA19-20	SA19-25
Sample Depth (ft)		0.5	10	20	25
Sample Date		11/16/2006	11/16/2006	11/16/2006	11/16/2006
VOCs	MSSL <sup>2</sup> ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
cis-1,3-Dichloropropene	1.75E+03 (gg)	5.5 U	5.5 U	5.5 U	5.8 U
Dibromochloromethane	2.60E+03	5.5 U	5.5 U	5.5 U	5.8 U
Dibromomethane	5.90E+05 (xx)	5.5 U	5.5 U	5.5 U	5.8 U
Dichlorodifluoromethane	3.40E+05	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
Ethyl t-butyl ether	7.90E+04 (kk)	5.5 U	5.5 U	5.5 U	5.8 U
Ethylbenzene	2.30E+05	5.5 U	5.5 U	5.5 U	5.8 U
Ethylene dibromide	7.00E+01	5.5 U	5.5 U	5.5 U	5.8 U
Hexachlorobutadiene	2.50E+04	5.5 U	5.5 U	5.5 U	5.8 U
isopropyl ether	--	5.5 U	5.5 U	5.5 U	5.8 U
Isopropylbenzene	5.80E+05	5.5 U	5.5 U	5.5 U	5.8 U
Methyl tert butyl ether	7.90E+04	5.5 U	5.5 U	5.5 U	5.8 U
Methylene chloride	2.20E+04	5.5 U	5.5 U	<b>10</b>	<b>4.4 J</b>
N-Butylbenzene	2.40E+05	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
N-Propylbenzene	2.40E+05	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
sec-Butylbenzene	2.20E+05	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
Styrene	1.70E+06	5.5 U	5.5 U	5.5 U	5.8 U
t-Butyl alcohol	--	11 UJ	11 UJ	11 UJ	11 UJ
tert-Butylbenzene	3.90E+05	5.5 U	5.5 U	5.5 U	5.8 U
Tetrachloroethene	1.70E+03	5.5 U	5.5 U	5.5 U	5.8 U
Toluene	5.20E+05	5.5 U	5.5 U	5.5 U	5.8 U
trans-1,2-Dichloroethylene	2.00E+05	5.5 U	5.5 U	5.5 U	5.8 U
trans-1,3-Dichloropropene	1.75E+03 (gg)	5.5 U	5.5 U	5.5 U	5.8 U
Trichloroethene	1.00E+02	5.5 U	5.5 U	5.5 U	5.8 U
Trichlorofluoromethane	1.40E+06	5.5 UJ	5.5 UJ	5.5 UJ	5.8 UJ
Vinylchloride	8.60E+02	5.5 U	5.5 U	5.5 U	5.8 U
Xylene (Total)	2.10E+05	11 U	11 U	11 U	12 U

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).  
(gg) Value for 1,3-dichloropropene used as surrogate for 1,1-dichloropropene, cis-1,3-dichloropropene and trans-1,3-dichloropropene based on structural similarities.  
(hh) Value for 1,2,4-trichlorobenzene used as surrogate for 1,2,3-trichlorobenzene based on structural similarities.  
(ii) Value for 1,2-dichloropropane used as surrogate for 2,2-dichloropropane based on structural similarities.  
(nn) Value for methyl isobutyl ketone used as surrogate for 2-hexanone based on structural similarities.  
(ww) Value for 2-chlorotoluene used as surrogate for 4-chlorotoluene based on structural similarities.  
(qq) Value for bromodichloromethane used as surrogate for bromochloromethane due to structural similarities.  
(xx) Value for methylene bromide used as surrogate for dibromomethane based on structural similarities.  
(kk) Value for methyl tertbutyl ether (MTBE) used as surrogate for ethyl-tert-butyl ether (ETBE) based on structural similarities.

**LOUs 30 and 56 Table 20**  
**Groundwater Characteristic Data - VOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>
Well ID		I-AR
Sample ID		I-AR
Sample Date		12/01/2006
VOCs	MCL <sup>2</sup> ug/L	ug/L
Naphthalene	6.20E+00	5.0 U
1,1,1,2-Tetrachloroethane	4.32E-01	5.0 U
1,1,1-Trichloroethane	2.00E+02	5.0 U
1,1,2,2-Tetrachloroethane	5.00E+00	5.0 U
1,1,2-Trichloroethane	5.00E+00	5.0 U
1,1-Dichloroethane	8.11E+02	5.0 U
1,1-Dichloroethene	7.00E+00	5.0 U
1,1-Dichloropropene	3.95E-01 gg	5.0 U
1,2,3-Trichlorobenzene	7.16E+00 hh	5.0 U
1,2,3-Trichloropropane	5.60E-03	5.0 U
1,2,4-Trichlorobenzene	7.00E+01	5.0 U
1,2,4-Trimethylbenzene	1.23E+01	5.0 U
1,2-Dibromo-3-chloropropane	2.00E-01	5.0 U
1,2-Dichlorobenzene	6.00E+02	<b>0.49 J</b>
1,2-Dichloroethane	5.00E+00	5.0 U
1,2-Dichloropropane	5.00E+00	5.0 U
1,3,5-Trimethylbenzene	1.23E+01	5.0 U
1,3-Dichlorobenzene	1.83E+02	5.0 U
1,3-Dichloropropane	1.22E+02	5.0 U
1,4-Dichlorobenzene	7.50E+01	5.0 U
2,2-Dichloropropane	1.65E-01 ii	5.0 U
2-Butanone	6.97E+03	10 U
2-Chlorotoluene	1.22E+02	5.0 U
2-Hexanone	2.00E+03 nn	10 UJ
2-Methoxy-2-methyl-butane	--	5.0 U
4-Chlorotoluene	1.22E+02 ww	5.0 U
4-Isopropyltoluene	--	5.0 U
4-Methyl-2-pentanone	1.99E+03	10 U
Acetone	5.48E+03	10 U
Benzene	5.00E+00	5.0 U
Bromobenzene	2.03E+01	5.0 U
Bromochloromethane	1.81E-01 qq	5.0 U
Bromodichloromethane	8.00E+01 r	5.0 U
Bromoform	8.00E+01 r	5.0 U
Bromomethane	8.66E+00	<b>0.92 J</b>
Carbon tetrachloride	5.00E+00	5.0 U
Chlorobenzene	1.00E+02 o	5.0 U
Chloroethane	4.64E+00	5.0 UJ
Chloroform	8.00E+01 r	<b>21</b>
Chloromethane	1.58E+02	<b>2.7 J</b>
cis-1,2-Dichloroethene	7.00E+01	5.0 U
cis-1,3-Dichloropropene	3.95E-01 gg	5.0 U

**LOUs 30 and 56 Table 20 (continued)  
Groundwater Characteristic Data - VOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A <sup>1</sup>
Well ID		I-AR
Sample ID		I-AR
Sample Date		12/01/2006
VOCs	MCL <sup>2</sup> ug/L	ug/L
Dibromochloromethane	8.00E+01 r	5.0 U
Dibromomethane	6.08E+01 xx	5.0 U
Dichlorodifluoromethane	3.95E+02	5.0 UJ
Ethyl t-butyl ether	1.10E+01 kk	5.0 U
Ethylbenzene	7.00E+02	5.0 U
Ethylene dibromide	--	5.0 U
Hexachlorobutadiene	8.62E-01	5.0 U
isopropyl ether	--	5.0 U
Isopropylbenzene	6.58E+02 zz	5.0 U
Methyl tert butyl ether	2.00E+01 a,uu	5.0 U
Methylene chloride	5.00E+00	5.0 U
N-Butylbenzene	2.43E+02	5.0 U
N-Propylbenzene	2.43E+02	5.0 U
sec-Butylbenzene	2.43E+02	5.0 U
Styrene	1.00E+02	R
t-Butyl alcohol	--	10 UJ
tert-Butylbenzene	2.43E+02	5.0 U
Tetrachloroethene	5.00E+00	5.0 U
Toluene	1.00E+03	5.0 U
trans-1,2-Dichloroethylene	1.00E+02	5.0 U
trans-1,3-Dichloropropene	--	5.0 U
Trichloroethene	5.00E+00	5.0 U
Trichlorofluoromethane	--	5.0 UJ
Vinylchloride	2.00E+00	5.0 UJ
Xylene (Total)	1.00E+04	10 U

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.  
(gg) Value for 1,3-dichloropropene used as surrogate for 1,1-dichloropropene, cis-1,3-dichloropropene and trans-1,3-dichloropropene based on structural similarities.  
(hh) Value for 1,2,4-trichlorobenzene used as surrogate for 1,2,3-trichlorobenzene based on structural similarities.  
(ii) Value for 1,2-dichloropropane used as surrogate for 2,2-dichloropropane based on structural similarities.

**LOUs 30 and 56 Table 20 (continued)**  
**Groundwater Characteristic Data - VOCs**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

**Notes: (continued)**

(nn) Value for methyl isobutyl ketone used as surrogate for 2-hexanone based on structural similarities.

(ww) Value for 2-chlorotoluene used as surrogate for 4-chlorotoluene based on structural similarities.

(qq) Value for bromodichloromethane used as surrogate for bromochloromethane due to structural similarities.

(o) See footnote (b). Listed under synonym monochlorobenzene.

(xx) Value for methylene bromide used as surrogate for dibromomethane based on structural similarities.

(kk) Value for methyl tertbutyl ether (MTBE) used as surrogate for ethyl-tert-butyl ether (ETBE) based on structural similarities.

(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.

(uu) NDEP, 1998. Oxygenated Fuel Corrective Action Guidance. Draft. October, 12 1998. URL [[http://ndep.nv.gov/bca/mtbe\\_doc.htm](http://ndep.nv.gov/bca/mtbe_doc.htm)].

**LOUs 30 and 56 Table 21**  
**Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

			Long Amphibole Protocol Structures	Long Amphibole Protocol Structures (structures/samples)	Long Chrysotile Protocol Structures	Long Chrysotile Protocol Structures (structures/samples)	Sampling Program
No.	Sample ID	Sample Date	s/gPM10		s/gPM10		
SA19	SA19	12/07/2006	<b>10100000</b>	<b>3</b>	<b>10100000</b>	<b>3</b>	Ph A <sup>1</sup>

**Notes:**

1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.



**Table 22**  
**Notes for Phase A Data Tables**

AP Plant Area and Old Building D-1 Washdown  
Tronox Facility - Henderson, Nevada

Blank	Not analyzed.
<b>Bold</b>	Bold values are constituents detected above the laboratory sample quantitation limit.
Gray	Grayed out values are non-detected values with the laboratory sample quantitation limits shown.
B	The result may be a false positive totally attributable to blank contamination.
D	Dissolved Metals.
DO	Dissolved Oxygen.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J-	The result is an estimated quantity and the result may be biased low.
J+	The result is an estimated quantity and the result may be biased high.
JB	The result may be biased high partially attributable to blank contamination.
JK	The result is an estimated maximum possible concentration.
R	The result was rejected and unusable due to serious data deficiencies. The presence or absence of the analyte cannot be verified.
S	Soluble metals
T	Total Metals.
U	The analyte was analyzed for, but was not detected above the laboratory sample quantitation limit.
UJ	The analyte was not detected above the laboratory sample quantitation limit and the limit is approximate.
mg/kg	Milligrams per kilogram.
mg/L	Milligrams per liter.
ml/min	Milliliters per minute.
ng/kg	Nanogram per kilogram.
nm	Not measured.
NTUs	Nephelometric Turbidity Units.
ORP	Oxidation-reduction potential.
pCi/g	PicoCuries per gram.
pci/L	PicoCuries per liter.
s/gPM10	Revised protocol structures per gram PM10 fraction dust.
TEF	Toxic Equivalency Factor.
TEQ	Toxic Equivalent Concentration
ug/kg	Micrograms per kilogram.
ug/L	Micrograms per liter.
umhos/cm	MicroSiemens per centimeter.
L	Sample ID suffix indicating the sample was collected using low low-flow pumping rates (100-150 ml/min).
F	Sample ID suffix indicating the sample was collected using low-flow pumping rates (150-480 ml/min) and field filtered.
Z	Sample ID suffix indicating the sample was collected using low-flow pumping rates (150-480 ml/min)
*	No analytical data is available for this sample due to a laboratory error.
(a)	Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).
(b)	Calculated assuming 1/2 detection limit as proxy for non-detected congeners and 2006 TEFs.
--	Not established